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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,671	11/13/2003	Dmitri Simonian	P121US	9864

26148 7590 08/23/2005

REFLECTIVITY, INC.
350 POTRERO AVENUE
SUNNYVALE, CA 94085

EXAMINER	
TALBOT, BRIAN K	
ART UNIT	**PAPER NUMBER**
1762	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/713,671	SIMONIAN ET AL.	
	Examiner	Art Unit	
	Brian K. Talbot	1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *6/8/05 (election)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-83* is/are pending in the application.

4a) Of the above claim(s) *65-83* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *11/13/03,4/27/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. Applicant's election of Group I, claims 1-64, in the reply filed on 6/8/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Non-elected claims 65-83 should be canceled in response to this Office Action.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9-13,15-23,27-31 and 40-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 9 and 36, the claims are confusing as it is unclear whether the coating is applied prior to or after the cleaning step. The sequence of steps is not clear.

With respect to claims 10-13,23-27 the term "coating agent" lacks antecedent basis.

With respect to claims 15-17,22 the terms "pressure", "first pressure" and "second pressure" lack antecedent basis.

With respect to claims 12 and 17, the steps (a) and (b) lack antecedent basis.

With respect to claims 18,19 and 39-42, the term "first component" and second component" lack antecedent basis.

With respect to claims 20,21, the terms "coating agent", "first component", "second component" lack antecedent basis.

With respect to claims 28-29, the term "the temperature" lacks antecedent basis. In addition, what temperature is being referred to?

With respect to claim 30, the term " the pressure" lacks antecedent basis. In addition, what temperature is being referred to?

With respect to claim 31 the term "the cleaning agent" lacks antecedent basis. The claim is confusing. Is the gaseous modifying agent the cleaning agent? Clarification is requested.

With respect to claims 40-42, the claim is confusing. Is the modifying agent is a cleaning agent or a coating agent.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3,8-18-25,30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with .

Ashurst et al., Wafer level anti-stiction coating for MEMS" teaches applying dichlorodimethylsilane (DDMS) anti-stiction coating on MEMS devices (abstract). Silicon samples are rinsed in acetone and cleaned with UV and ozone (UVO), treated with HF and UVO cleaned again prior to depositing the DDMS coating thereon. The pressure is reduced to less than 10 mTorr for plasma UVO cleaning. Water gas is also utilized during the cleaning process. Next the chamber pressure raised and DDMS is introduced to form the anti-stiction layer (pgs. 8-9). Hydrogen peroxide is also taught as a known cleaning agent for silicon surface prior to forming anti-stiction coatings (pg. 4)

Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with Wallace et al. (5,512,374).

Ashurst et al., Wafer level anti-stiction coating for MEMS" fails to teach the anti-stiction coating being perfluoropolyether.

Wallace et al. (5,512,374) teaches perfluoropolyether coating for eliminating sticking and adhesion in MEMS devices (abstract).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Ashurst et al., Wafer level anti-stiction coating for MEMS" process by substituting on anti-stiction agent (DDMS) for another (PPFE) with the expectation of achieving similar success as evidenced by Wallace et al. (5,512,374).

Claims 4,10-13,16,20, 23-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with Zazerra et al. (6,537,380).

Ashurst et al., Wafer level anti-stiction coating for MEMS" fails to teach the cleaning agent including acetic acid.

Zazerra et al. (6,537,380) teaches fluorinated solvent containing ozone for cleaning treatment of MEMS devices prior to coating with an anti-stiction coating. Co-solvents of the cleaning solution include acetic acid (col. 4, lines 30-40).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Ashurst et al., Wafer level anti-stiction coating for MEMS" process by including acetic acid in the cleaning solution with the expectation of achieving similar success as evidenced by Zazerra et al. (6,537,380).

Claims 6,7,28 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with Hornbeck (5,411,769) or Kobrin et al. (US 2005/0109277).

Ashurst et al., Wafer level anti-stiction coating for MEMS" fails to teach the temperature of the chamber.

Hornbeck (5,411,769) teaches method for cleaning MEMS devices and coating with anti-stiction coatings whereby the chamber is at a temperature of 80oC (col. 3, lines 35-45).

Kobrin et al. (US 2005/0109277) teaches substrate temperatures of up to 100°C [0013].

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Ashurst et al., Wafer level anti-stiction coating for MEMS" process by performing the treatment at the claimed temperatures as evidenced by Hornbeck (5,411,769) or Kobrin et al. (US 2005/0109277).

Claims 31-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashurst et al., Wafer level anti-stiction coating for MEMS" in combination with Chinn et al (6,902,947) or Leung et al. (6,576,489).

Ashurst et al., Wafer level anti-stiction coating for MEMS" fails to teach the MEMS device being placed in an assembly and then into the chamber for cleaning/coating.

Chinn et al (6,902,947) depicts a chamber having a gas delivery system (316) and Leung et al. (6,576,489) depicts a chamber (60) having inlet ports (62) for introducing the vapor phase coating materials (col. 5, lines 25-30 and Fig. 10).

Therefore it would have been obvious for one skilled in the art at the time the invention was made to have modified Ashurst et al., Wafer level anti-stiction coating for MEMS" chamber to have inlet ports/openings to supplying the gases as evidenced by Chinn et al (6,902,947) or Leung et al. (6,576,489) with the expectation of achieving similar results. In addition, the size of the gas inlet/delivery system is deemed as an obvious modification and would be within the skill on one practicing in the art to have utilized an inlet gas port with the claimed size.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K. Talbot whose telephone number is (571) 272-1428. The examiner can normally be reached on Monday-Friday 6AM-3PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy H. Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

B K Talbot 8/17/05

Brian K Talbot
Primary Examiner
Art Unit 1762